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Figure 1: Nucleotide sequence comparison

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KETO2.seq  ATGCAGCTAGCAGCGACAGTAATGTTGGAGCAGCTTACCGGAAGCGCTGAGGCACTCAAGGAGAAGGAGAAGGAGGTTGCAGGCAGCTCTGACGTGTTGC 100
X86782.seq  ATGCAGCTAGCAGCGACAGTAATGTTGGAGCAGCTTACCGGAAGCGCTGAGGCACTCAAGGAGAAGGAGAAGGAGGTTGCAGGCAGCTCTGACGTGTTGC 100

KETO2.seq  GTACATGGGCGAACCAGTACTCGCTTCCGTCAGAGGAGTCAGACGCGGCCCGCCCGGGACTGAAGAATGCCTACAAGCCACCACCTTCCGACACAAAGGG 200
X86782.seq  GTACATGGGCGAACCAGTACTCGCTTCCGTCAGAGGAGTCAGACGCGGCCCGCCCGGGACTGAAGAATGCCTACAAGCCACCACCTTCCGACACAAAGGG 200

KETO2.seq  CATCACAATGGCGCTAGCTGTCTATCGGCTCCTGGGCGCAGTGTTCCTCCACGCCATTTTCAAATCAAGCTTCCGACCTCCTTGGACCAGCTGCACTGG 300
X86782.seq  CATCACAATGGCGCTAGCTGTCTATCGGCTCCTGGGCGCAGTGTTCCTCCACGCCATTTTCAAATCAAGCTTCCGACCTCCTTGGACCAGCTGCACTGG 300

KETO2.seq  CTGCCCCGTGTGATGCCACAGCTCAGCTGGTTAGCGGCAGCAGCAGCCTGCTGCACATCGTCGTAGTATTCTTTGTCTGGAGTTCTGTACACAGGCC 400
X86782.seq  CTGCCCCGTGTGATGCCACAGCTCAGCTGGTTAGCGGCAGCAGCAGCCTGCTGCACATCGTCGTAGTATTCTTTGTCTGGAGTTCTGTACACAGGCC 400

KETO2.seq  TTTTATCACCACGCATGATGCTATGCATGGCACCATCGCCATGAGAAACAGGCAGCTTAATGACTTCTTGGGCAGAGTATGCATCTCCTTGTACGCCTG 500
X86782.seq  TTTTATCACCACGCATGATGCTATGCATGGCACCATCGCCATGAGAAACAGGCAGCTTAATGACTTCTTGGGCAGAGTATGCATCTCCTTGTACGCCTG 500

KETO2.seq  GTTTGATTACAACATGCTGCACCGCAAGCATTGGGAGCACCACAACCACACTGGCGGAGGTGGGCAAGGACCCTGACTTCCACAGGGGAAACCTGGCATT 600
X86782.seq  GTTTGATTACAACATGCTGCACCGCAAGCATTGGGAGCACCACAACCACACTGGCGGAGGTGGGCAAGGACCCTGACTTCCACAGGGGAAACCTGGCATT 600

KETO2.seq  GTGCCCTGGTTTGCCAGCTTCATGTCCAGCTACATGTCGATGTGGCAGTTTGCGCCCTCGCATGGTGGACGGTGGTATGCAGCTGCTGGGTGCGCCAA 700
X86782.seq  GTGCCCTGGTTTGCCAGCTTCATGTCCAGCTACATGTCGATGTGGCAGTTTGCGCCCTCGCATGGTGGACGGTGGTATGCAGCTGCTGGGTGCGCCAA 700

KETO2.seq  TGGCGAACCTGCTGGTGTTCATGGCGGCCCGGCCATCCTGTCCGCCCTCCGCTTGTCTACTTTGGCAGGTACATGCCCCACAAGCCTGAGCCTGGCGC 800
X86782.seq  TGGCGAACCTGCTGGTGTTCATGGCGGCCCGGCCATCCTGTCCGCCCTCCGCTTGTCTACTTTGGCAGGTACATGCCCCACAAGCCTGAGCCTGGCGC 800

KETO2.seq  CGCGTCAGGCTCTTACCAGCCGTCATGAACCTGGTGGAGTCGCGCACTAGCCAGGCGTCCGACCTGGTCAGCTTTCTGACCTGCTACCACTTCGACCTG 900
X86782.seq  CGCGTCAGGCTCTTACCAGCCGTCATGAACCTGGTGGAGTCGCGCACTAGCCAGGCGTCCGACCTGGTCAGCTTTCTGACCTGCTACCACTTCGACCTG 900

KETO2.seq  CACTGGGAGCACCACCGCTGGCCCTTTGCCCCCTGGTGGGAGCTGCCCAACTGCCGCCCTGTCTGGCCGAGGTCTGGTTCCTGCCTAG 990
X86782.seq  CACTGGGAGCACCACCGCTGGCCCTTTGCCCCCTGGTGGGAGCTGCCCAACTGCCGCCCTGTCTGGCCGAGGTCTGGTTCCTGCCTAG 990
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Figure 2: Protein sequence comparison

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KETO2.pro  M Q L A A T V M L E Q L T G S A E A L K E K E K E V A G S S D V L R T W A T Q Y S L P S E E S D A A 50
X86782.pro M Q L A A T V M L E Q L T G S A E A L K E K E K E V A G S S D V L R T W A T Q Y S L P S E E S D A A 50

KETO2.pro  R P G L K N A Y K P P P S D T K G I T M A L A V I G S W A A V F L H A I F Q I K L P T S L D Q L H W 100
X86782.pro R P G L K N A Y K P P P S D T K G I T M A L R V I G S W A A V F L H A I F Q I K L P T S L D Q L H W 100

KETO2.pro  L P V S D A T A Q L V S G S S S L L H I V V V F F V L E F L Y T G L F I T T H D A M H G T I A M R N 150
X86782.pro L P V S D A T A Q L V S G T S S L L D I V V V F F V L E F L Y T G L F I T T H D A M H G T I A M R N 150

KETO2.pro  R Q L N D F L G R V C I S L Y A W F D Y N M L H R K K H W E H H N H T G E V G K D P D F H R G N P G I 200
X86782.pro R Q L N D F L G R V C I S L Y A W F D Y N M L H R K K H W E H H N H T G E V G K D P D F H R G N P G I 200

KETO2.pro  V P W F A S F M S S Y M S M W Q F A R L A W W T V V M Q L L G A P M A N L L V F M A A A P I L S A F 250
X86782.pro V P W F A S F M S S Y M S M W Q F A R L A W W T V V M Q L L G A P M A N L L V F M A A A P I L S A F 250

KETO2.pro  R L F Y F G T Y M P H K P E P G A A S G S S P A V M N W W K S R T S Q A S D L V S F L T C Y H F D L 300
X86782.pro R L F Y F G T Y M P H K P E P G A A S G S S P A V M N W W K S R T S Q A S D L V S F L T C Y H F D L 300

KETO2.pro  H W E H H R W P F A P W W E L P N C R R L S G R G L V P A 329
X86782.pro H W E H H R W P F A P W W E L P N C R R L S G R G L V P A 329
```

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Figure 3:

Construct for the overexpression of the ketolase ( $\beta$ -C-4-oxygenase) protein from *H. pluvialis* using *rbcS* transit peptide from pea under the control of the d35S promoter (Tagetes transformation construct)

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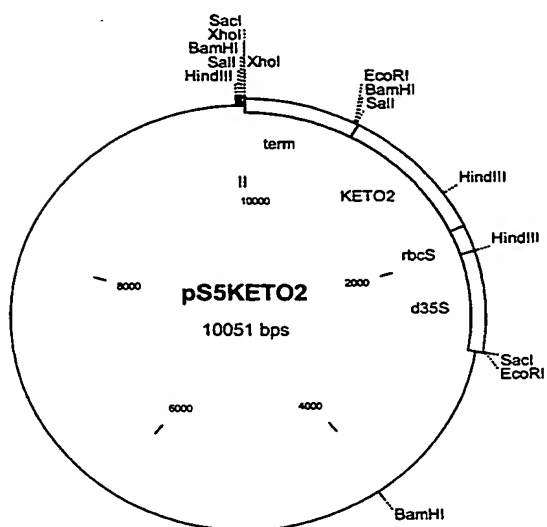
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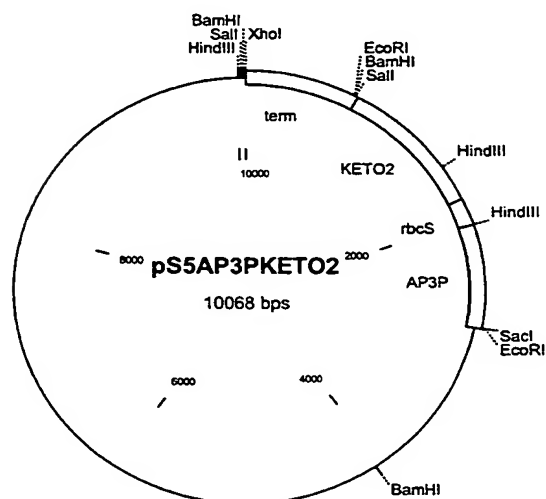


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Figure 4:

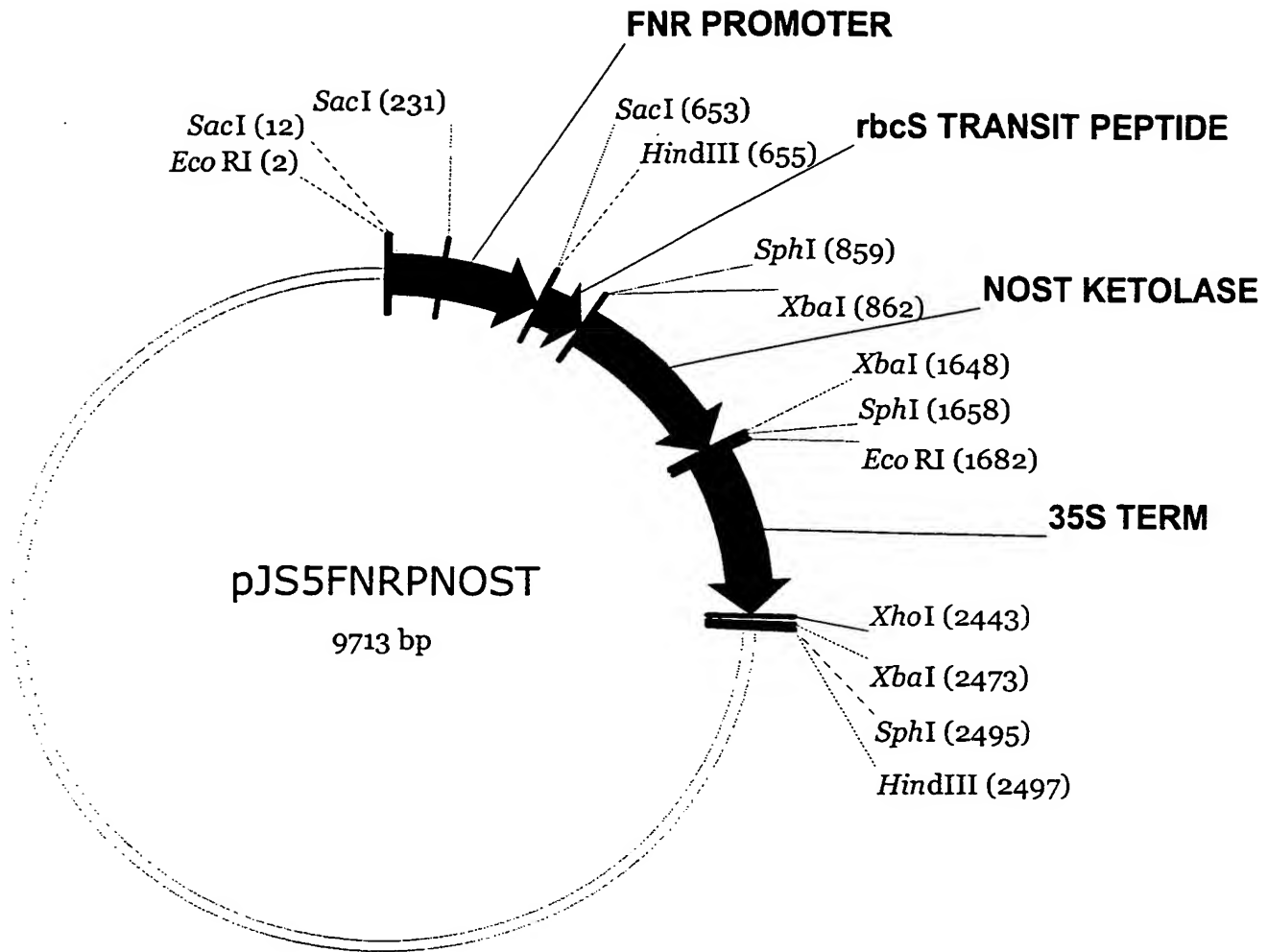
Construct pS5AP3PKETO2 for the overexpression of the ketolase ( $\beta$ -C-4-oxygenase) proteins from *H. pluvialis* using *rbcS* transit peptide from pea under the control of the AP3P promoter (*Tagetes* transformation construct).



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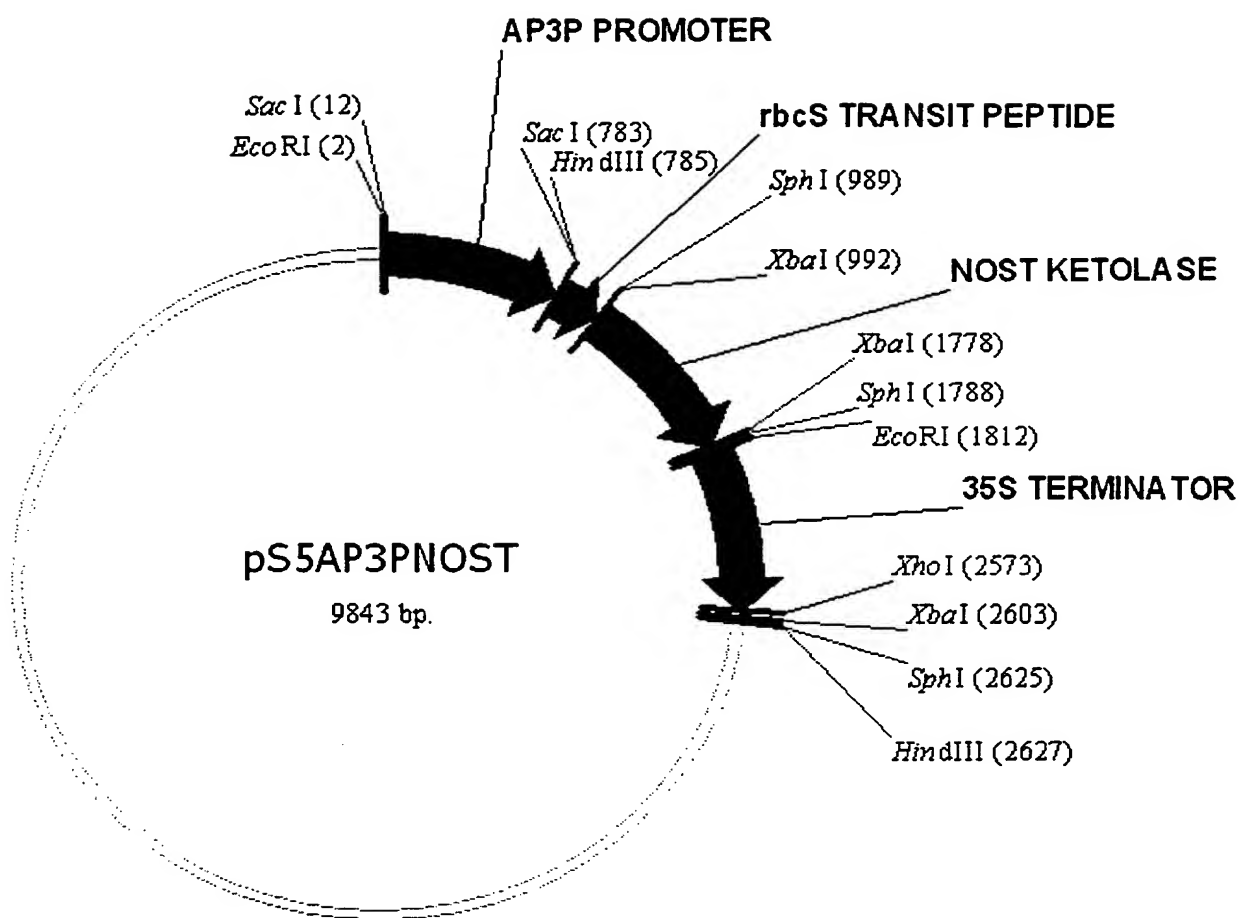
Figure 5



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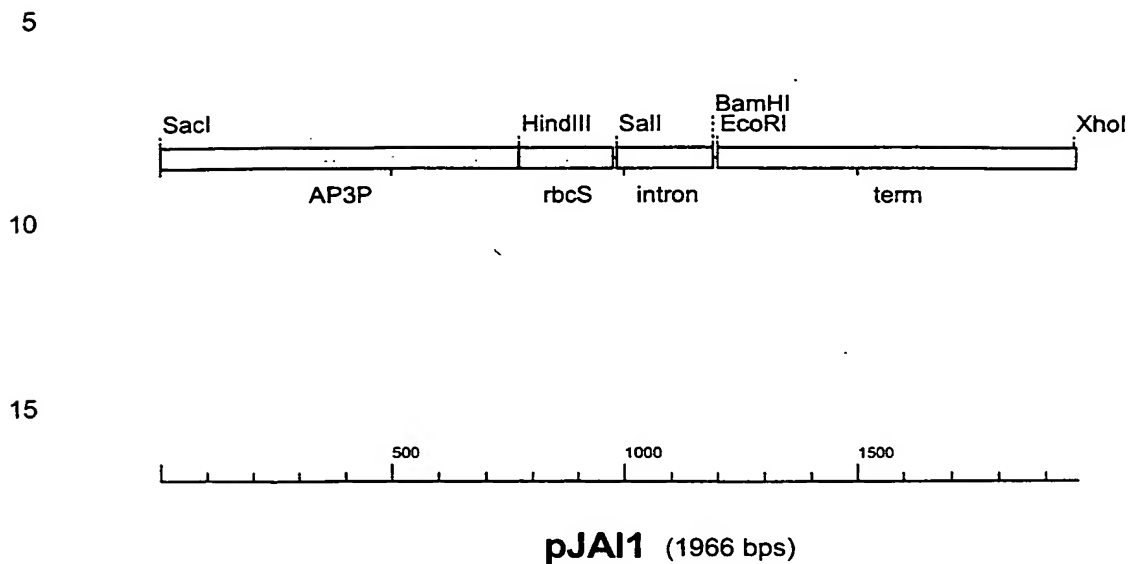
Figure 6



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Figure 7:

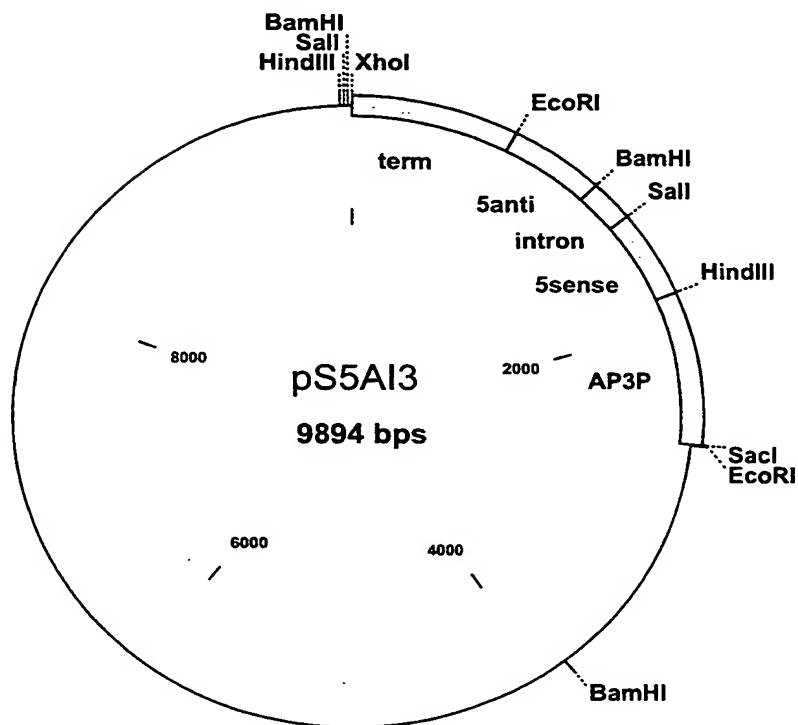
Cloning cassette for producing inverted-repeat expression cassettes for the flower-specific expression of epsilon-cyclase dsRNAs in *Tagetes erecta*



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Figure 8: Expression vector for the flower-specific production of dsRNA transcripts comprising 5'-terminal fragments of the epsilon-cyclase cDNA (AF251016) under the control of the AP3P promoter

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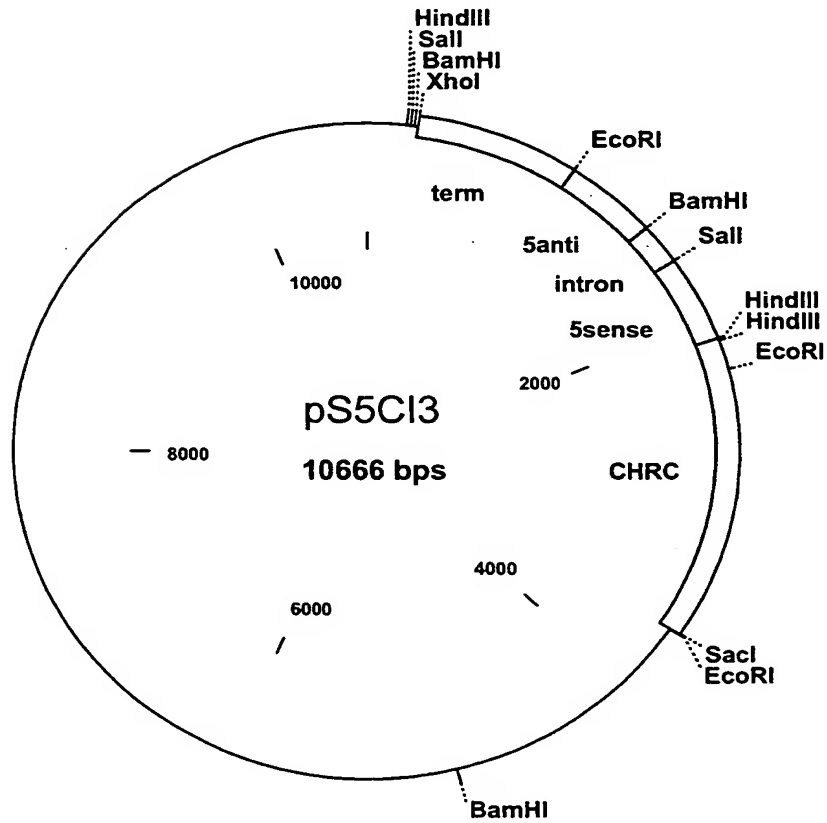




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Figure 9: Expression vector for the flower-specific production of dsRNA transcripts comprising 5'-terminal fragments of the epsilon-cyclase cDNA (AF251016) under the control of the CHRC promoter

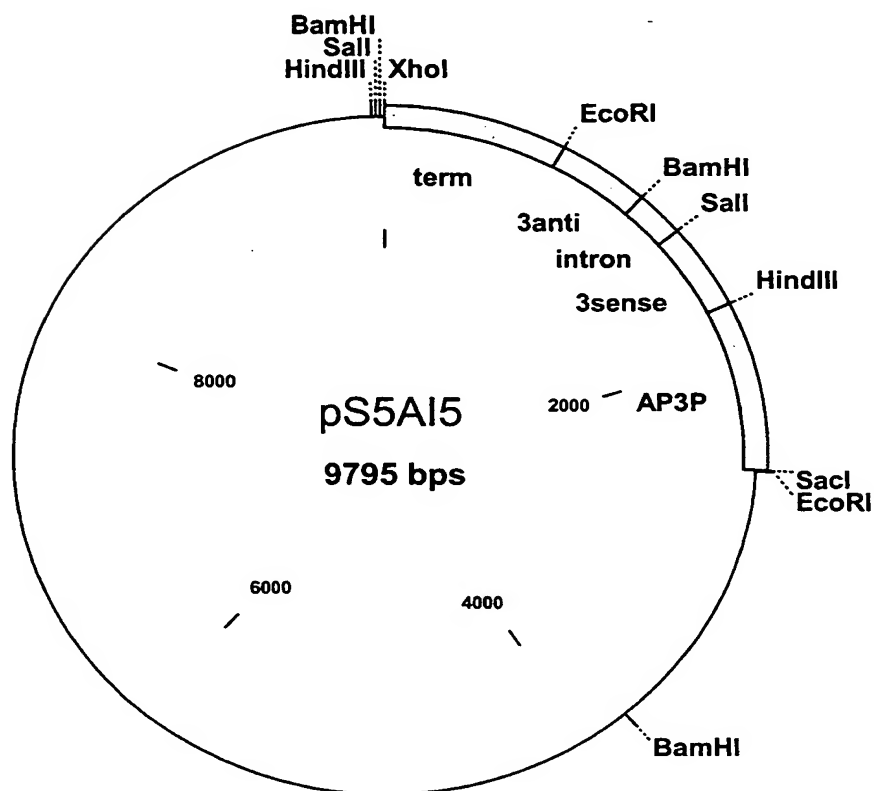
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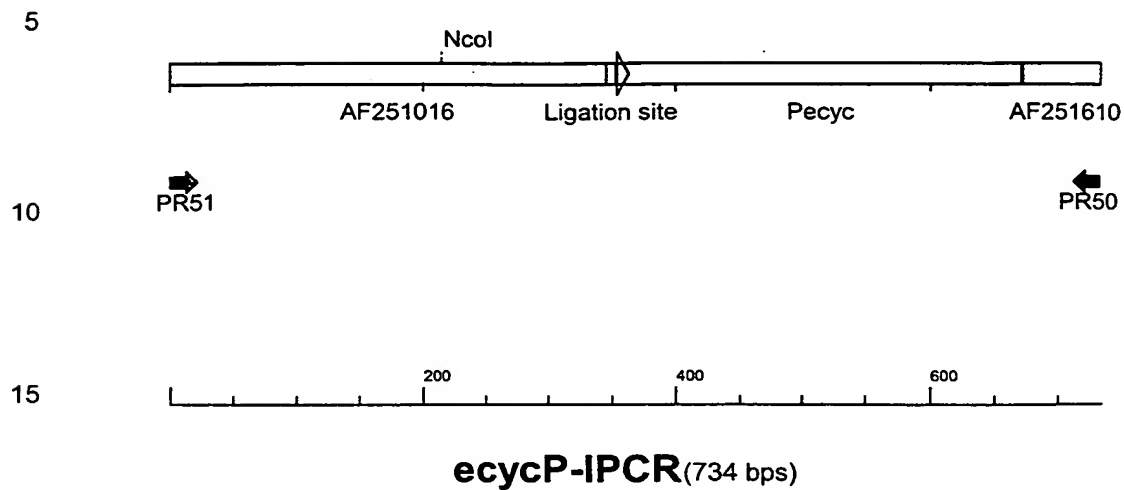
Figure 10: Expression vector for the flower-specific production of dsRNA transcripts comprising 3'-terminal fragments of the epsilon-cyclase cDNA (AF251016) under the control of the AP3P promoter

5



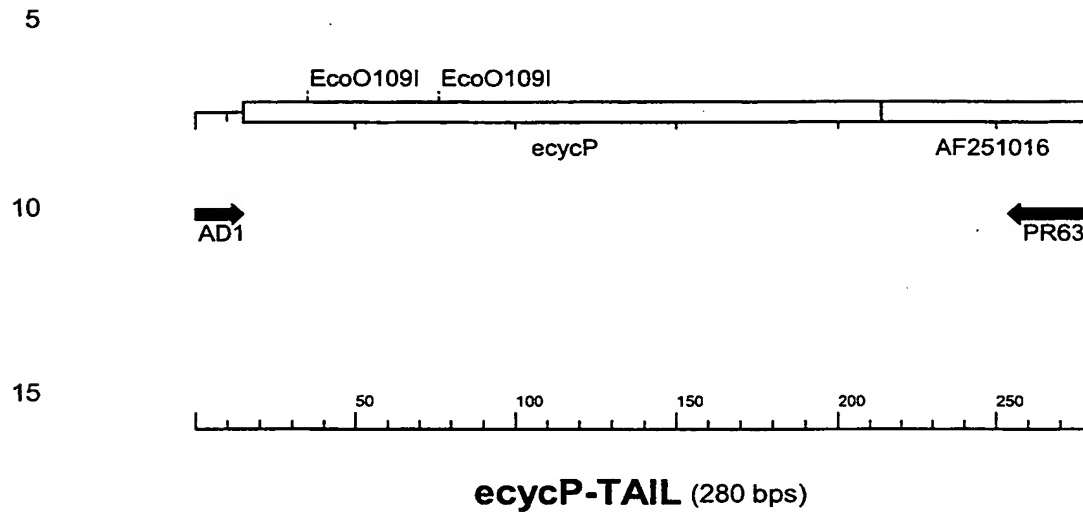
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Figure 11: Inverse PCR amplicon which comprises the 312 bp fragment of the epsilon-cyclase promoter



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Figure 12: TAIL PCR amplicon which comprises the 199 bp fragment of the epsilon-cyclase promoter



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Figure 13: Expression vector for the flower-specific production of dsRNA transcripts comprising the 312 bp promoter fragment of epsilon-cyclase under the control of the AP3P promoter

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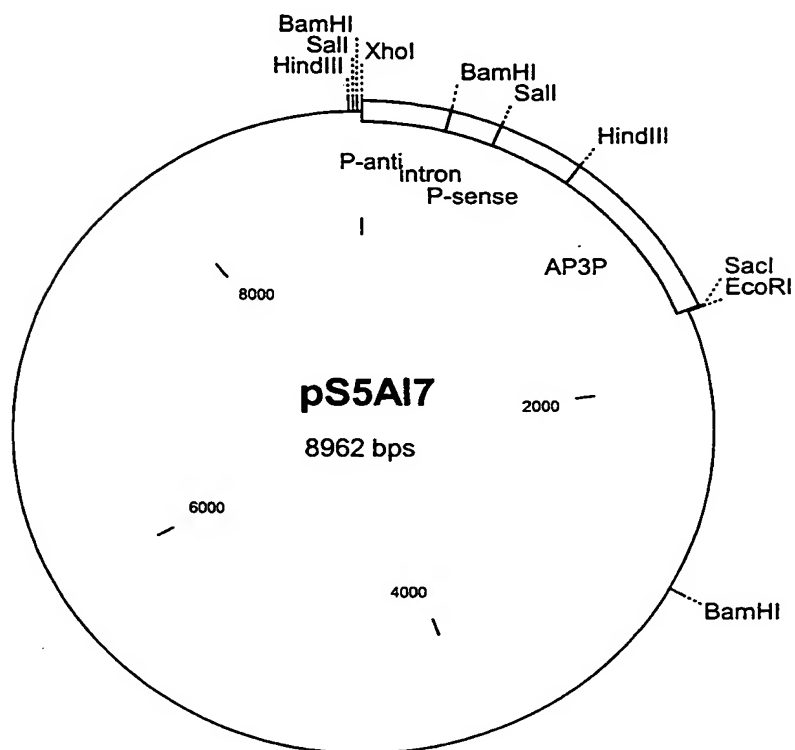
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Figure 14: Expression vector for the flower-specific production of dsRNA transcripts comprising the 312 bp promoter fragment of epsilon-cyclase under the control of the CHRC promoter

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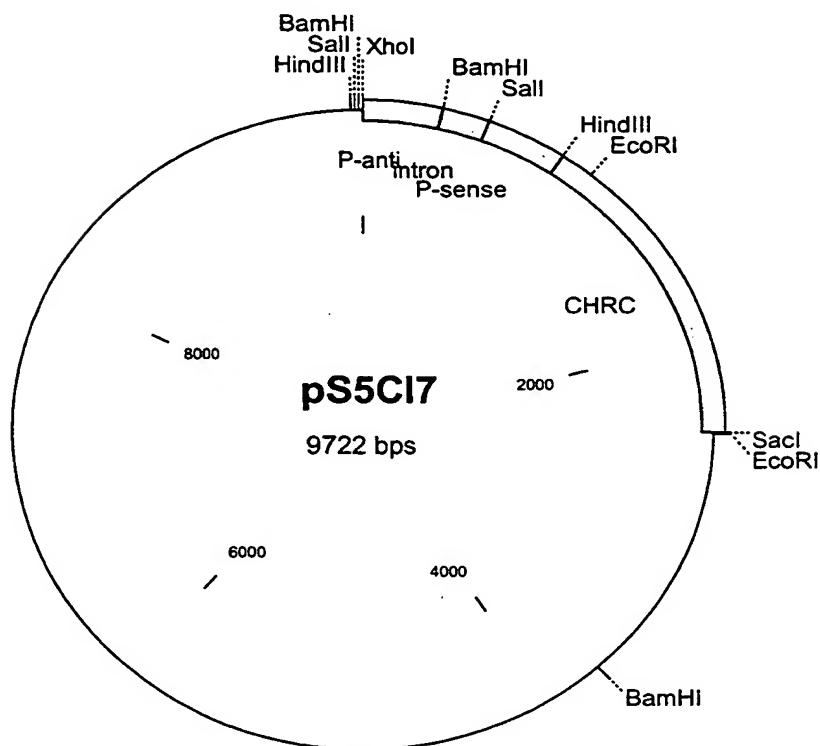
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Figure 15: Expression vector for the flower-specific production of dsRNA transcripts comprising the 312 bp promoter fragment of epsilon-cyclase under the control not only of the AP3P promoter, but also the CHRC promoter

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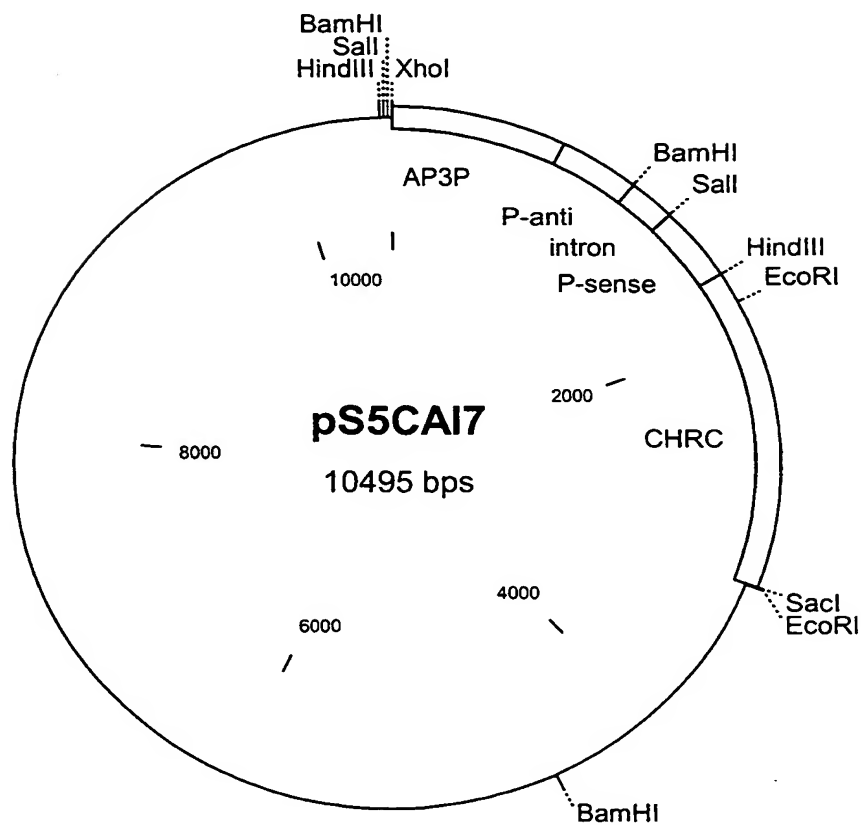
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